D. Remarks

Rejection of Claims 1, 2 and 21-24 Under 35 U.S.C. §102(a) based on Applicant's Background Art (*Background Art*).

The rejection of claims 1 and 2 will first be addressed.

The invention of claim 1 is directed to a semiconductor device having an insulating film formed from a gas containing carbon that includes a contact, a gate electrode, and a silicon nitride film for preventing carbon diffusion. The silicon nitride film is formed on the substrate while traversing a region except a portion for providing electrical connection between the contact and the diffusion layer. In addition, the silicon nitride film is formed on a nitride film at the upper and side portions of the gate electrode.

As is well established, anticipation requires the presence of a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.[1]

The *Background Art* does not show a silicon nitride film formed on a nitride film at the upper and side portions of the gate electrode. To show such a limitation, the rejection relies on the following argument.

> Films 20 and 24 each considered two separate nitride layers laminated on one another where the first layer (the lower portion of 20 and the inside portion of 24) are the nitride film on the gate electrode while the second layer (the upper portion of 20 and the outside portion of 24) are the silicon nitride film for preventing carbon diffusion.[2]

This teaching is not in the *Background Art.* Applicant respectfully requests a citation that shows the teaching a laminate film, as argued above. Anticipation requires disclosure of claim elements from a single reference. Because such laminate film is not shown in the *Background Art*, such a teaching cannot be from the *Background Art*, and thus anticipation cannot be established.

In addition, the *Background Art* does not disclose a silicon nitride film that traverses a region of the substrate, as claimed. Applicant's *Background Art* does show a semiconductor

[1] See Lindemann Maschinenefabrick GmbH v. American Hoist & Derrick Col., 221 USPQ 481, 485 (Fed. Cir. 1984).

[2] See the Office Action, dated 3/4/02, Page 2, Lines 11-15.

device with a silicon nitride film. However, the silicon nitride film of the *Background Art* does not traverse a region of the substrate except the portion that provide electrical connection for a contact, as recited in claim 1. This lack of the claim limitation is best understood with reference to FIGS. 16(a) and 1. FIG. 16(a) of the *Background Art* shows a silicon nitride film side wall 24, however such a film does not traverse a region of the substrate, as recited in the claim[3]. This is in contrast to the very particular embodiment of FIG. 1. In FIG. 1, a silicon nitride film 62 traverses a substrate except a portion where a contact connects to a diffusion layer.[4] Of course, it is understood that FIG. 1 is but one very particular example of the invention of claim 1.

Thus, because the *Background Art* does not show all limitations of claim 1, this ground of rejection is traversed.

The rejection of claims 21-24 will now be addressed.

The invention of claim 21 recites a semiconductor device on a silicon substrate, with a device structure that includes an insulating film formed from a gas containing carbon. The semiconductor device includes a contact, a capacitor contact that penetrates second and third interlayer insulating films, and a conductor formed on the second interlayer insulating film that contains a nitride film at upper and side portions. In addition, the semiconductor device includes a silicon nitride film for preventing carbon diffusion. The silicon nitride film is formed on the third interlayer insulating film while traversing a region except a connection portion between a lower electrode and the capacitor contact. The silicon nitride film is also formed above the nitride film at the upper portion of the conductor.

Because the *Background Art* does not show all limitations of this claim, this ground of rejection is traversed.

The *Background Art* does not show a capacitor contact as recited in claim 21. The rejection argues that the *Background Art* shows a capacitor contact 46, an interlayer insulating film 32 (argued to correspond to Applicant's third interlayer insulating film), and an interlayer insulating film 26 (argued to correspond to Applicant's second interlayer insulating film).[5] The

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[3] See FIG. 16(a) of Applicant's Specification, which shows silicon nitride film side walls **24** that do not traverse the substrate.

[4] See Applicant's Specification, FIG. 1, which shows silicon nitride film **62**, which traverses a substrate **12** at right and left edges of FIG. 1.

[5] See the Office Action, dated 3/4/03, Page 3, Lines 5-13.

capacitor contact of claim 21 penetrates both the second and third interlayer insulating film. However, in the interpretation relied upon by the rejection it is clear that the capacitor contact 46 penetrates only interlayer insulating film 32 and not interlayer insulating film 26. Thus, the *Background Art* does not show a contact that penetrates both a second and third interlayer insulating film, as recited by claim 21.

In addition, the *Background Art* does not show a silicon nitride film for preventing carbon diffusion formed above a nitride film at the upper portion of a conductor, as recited in claim 21. To show such a limitation, the rejection argues the following.

> Films 36 and 40 each considered two separate nitride layers laminated on one another where the first layer (the lower portion of 36 and the inside portion of 40) are the nitride film on the conductor while the second layer (the upper portion of 36 and the outside portion of 40) are the silicon nitride film for preventing carbon diffusion.[6]

As in the case of claim 1, this teaching is not in the *Background Art.* Applicant respectfully requests a citation that shows the teaching a laminate film, as argued above. Because such a teaching is not shown in the *Background Art*, anticipation on these grounds cannot have been established.

Still further, the *Background Art* does not show silicon nitride film for preventing carbon diffusion formed on a third interlayer insulating film that traverses a region except a connection portion. Applicant's *Background Art* discloses a semiconductor device with a silicon nitride film, but such a film does not traverse a region except a connection portion. This lack of the claim limitation is best understood with reference to FIGS. 17 and 4. In FIG. 17 of the *Background Art*, a silicon nitride film and side wall are formed, but do not traverse a region except a connection portion, as recited in the claim[7]. This is in contrast to the very particular embodiment of the invention shown in FIG. 4. In FIG. 4, a silicon nitride film traverses a region

[6] See the Office Action, dated 3/4/02, Page 3, Lines 13-16.
[7] See FIG. 17 of Applicant's Specification, which shows silicon nitride film side walls **40** that do not traverse a region except a connection portion.

except a connection portion.[8] Of course, it is understood that FIG. 4 is but one very particular example of the invention of claim 21.

Thus, because the *Background Art* does not various limitations of claim 21, this ground of rejection is traversed.

The present claims 1, 2 and 21-24 are believed to be in allowable form. It is respectfully requested that the application be forwarded for allowance and issue.

Respectfully Submitted,

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[8] See Applicant's Specification, FIG. 4, which shows silicon nitride film **72**, formed on a third interlayer insulating film **42**, and traversing region except where a lower electrode **52** contacts a contact plug **46**.